

REMARKS

Claims 1-41 are pending, and all claims have been rejected in the final Office Action, including the independent claims 1, 15, 23, and 36. These independent claims are all rejected as anticipated under 35 U.S.C. § 102(b) by *Dymetman* (U.S. Patent No. 6,330,976).

Applicant now amends the claims without prejudice, in order to expedite allowance. All of the claim amendments are fully supported by the specification as originally filed.

The present amendments clarify that the URL glyphs are located in an arbitrary scene. In contrast, the *Dymetman* reference says that it is necessary to provide the identifier in a specific text region (col. 5, lines 17-19), which plainly is not part of an arbitrary scene. The present claimed invention is able to locate a single URL in an arbitrary scene by searching for the well-known glyphs “http” or “www,” whereas *Dymetman* does not address this problem.

The cited *Clark* reference says at page 450 (last paragraph) that it is directed “to finding and recovering paragraphs and blocks of text rather than single words or lines.” Thus, *Clark* does not address the problem finding a piece of text as short as “www” or “http.” It therefore would not have been obvious to combine *Clark* with *Dymetman* to find and recover particular glyphs of standardized URL characters in an arbitrary scene, as presently claimed.

Nothing in *Dymetman* suggests locating URL glyphs at an arbitrary place on a flat surface, much less in an arbitrary scene. And, a person skilled in the art would not have realized from *Clark* that the standardized part of a URL (e.g. “www”) can enable finding text in such an arbitrary scene.

Summary of the Present Invention

The present invention is a mobile device, system, method and software for communicating with the internet utilizing a written universal resource locator (URL). The basic idea of the invention is to use a digital camera module to take a digital photograph of an object having a written URL, using pattern recognition to extract the URL from the photograph

based on known URL patterns (or glyphs) as “http”, “www”, “com” and using the recognized URL to command the mobile device to open the corresponding URL in the relevant browsing application.

Independent claim 1 is a method claim, comprising the steps of: using a camera unit to acquire a raw visual light image that contains the written URL, converting the raw visual light image to an electronic image, locating glyphs of at least one particular standardized set of URL characters in the electronic image, extracting an extractable URL from the electronic image, sending the extractable URL in a request signal to a web server in order to access an internet site, and presenting the internet site.

Independent claim 16 is a system claim, comprising: a digital camera for photographing objects with written URLs, URL extraction means for finding glyphs from the digital photograph, an internet interface, and display for presenting the internet site.

Independent claim 23 is a mobile device claim, comprising means for commanding to start photographing, a camera, a display, and an internet device, wherein the mobile device is for processing the image signal from the camera in order to obtain the web site signal from the internet interface.

Independent claim 36 is a claim for computer-readable medium, comprising a URL locator software module for locating URLs in an electronic image, a scan and text recognition software module for extracting URLs from the electronic image, and a browser-based user interface module for allowing the user to decide whether to use the extracted URL for retrieving and presenting web pages.

Typically, a need for extracting URLs may arise in cases where a mobile device user can use the camera module to photograph text from, for example, magazine stories, advertisements, or other written information referring to related internet-addresses. This capability would make it easier to show the content to the user, compared to a situation where the user needs to type the URL in the device manually, especially if the URL is long or complex.

Summary of the Primary Reference

The Office Action refers to *Dymetman*, where an article of manufacture, a method, and system for obtaining automatic actions in a network of detection processing and action devices are presented. *Dymetman* relies upon specially encoded markings embedded into a document hard copy (col. 8, lines 55-63), in order to enable the detection of special symbols that indicate the linkage between tangible and electronic media (for example, finding hyperlinks of Xerox DataGlyph format in printed media).

A typical scenario of using *Dymetman* (see Fig. 9) is to have this kind of marking scheme utilized both in document hard copy (col. 16, lines 31-46) and in a corresponding “digital page” (col. 16, lines 47-50), where the indication of the “section of interest” (Fig. 11) from the hardcopy to the electronic system is arranged by means of a camera-equipped detector (Fig. 8).

In summary, *Dymetman* presents various embodiments for building an isomorphism between tangible and intangible media formats, when such is needed.

Further Differences Between Present Claim 1 and *Dymetman*

Applicant notes that the *Dymetman* reference teaches away from viewing a “written” URL. At column 5, lines 20-23, *Dymetman* explains that his invention is different from “conventional techniques that rely on URLs” as action identifiers. *Dymetman* does discuss using URLs at column 26, lines 21-39 cited by the Office Action, but that discussion in *Dymetman* involves a user who “copies the URL” rather than a camera that acquires the URL from a visual image (as in present claim 1).

The present claim 1 requires locating glyphs of URL characters. However, FIGs. 5A and 5B of *Dymetman* merely show page-identifiers (302, 402) and location codes (304, 404) as described at column 13, instead of showing a “standardized set of URL characters” (e.g. “www” or “org” or “http”) as presently claimed.

Dymetman's description of those figures 5A and 5B (at column 5, lines 62-63) makes clear that the markings in FIGs. 5A and 5B are "encoded" which again is entirely different from the present claimed "standardized set of URL characters."

Although the Office Action refers to both FIGs. 5A and 5B as showing the present claimed "glyphs," column 13, lines 33-34 of *Dymetman* indicates that only FIG. 5B contains "DataGlyph" markings. Even with regard to FIG. 5B, it is unclear whether the Office Action is referring to the page-identifiers (402) or the location codes (404). But in either case, these glyphs of *Dymetman's* FIG. 5B encode bits, instead of being glyphs of a "standardized set of URL characters" as claimed in step 3 of present claim 1. *Dymetman's* location codes (404) merely indicate localization on a page or sticker (see column 9, lines 19-20), and thus bear no resemblance to URL characters (also see column 8, lines 65-67). The page-identifiers or "pid" (402) in FIG. 5B are DataGlyph markings that identify an action produced through the network and also identify the page from which it is decoded (see column 9, lines 26-28).

The "DataGlyphs" to which *Dymetman* refers embed computer-readable data on surfaces such as paper, labels, plastic, glass, or metal. Basic DataGlyphs are a pattern of forward and backward slashes representing ones and zeroes. This pattern forms an evenly textured field. Unlike most barcodes, DataGlyphs are flexible in shape and size. Their structure and robust error correction also make them suitable for curved surfaces and other situations where barcodes fail. This is the kind of thing that *Dymetman* is referring to, in order to identify an item on which the DataGlyphs are embedded. In contrast, the present claimed invention deals with a written URL that consequently says nothing about the item on which the URL is written.

The system as presented in *Dymetman* does not make any effort to locate URLs specifically—it is up to the user to point toward the URL of interest using the pointer device. On the other hand, for the present invention, finding the position of URLs is more important, because in our case we do not have any other knowledge of the document in question and we try to automatically locate the glyphs based on the appearance, not location. Unless the

corresponding digital page of *Dymetman* supports the URL functionality, the *Dymetman* system does not make any difference between arbitrary text and URLs. Actually, the flow of events implied by *Dymetman* is quite the opposite of our invention — *Dymetman* suggests that there is primarily an electronic image of the document and optionally a printed version of the same document, and *Dymetman* is all about building correspondence between those two documents through a coordinate system presented in Fig. 5(A, B).

The Office Action states that *Dymetman* teaches “extracting an extractable URL from the electronic image.” *Dymetman* clearly does not teach this aspect of the present invention. First, *Dymetman*’s page ID and location information is not an “extractable URL,” but merely coordinates that connect the visible document to the corresponding electronic version. Second, according to *Dymetman*, this is something that the user specifically points and clicks with significantly good pointing resolution compared to our invention, where a bigger coverage of the surface is covered by the image, and finding the URLs in the image is a key factor of the invention.

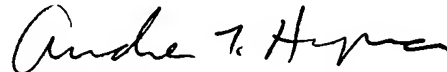
The present invention comprises sending the URL to a corresponding server in the Internet to access a site. This is different from *Dymetman*’s location coordinates of a digital page residing in the local server memory. When we send a URL request, we do not yet know what the information to come is, not to mention how it appears visually.

The Office Action states that *Dymetman* teaches processing a reply from the web server, and presenting the Internet site. However, it is assumed that there is a known coordinate isomorphism between the tangible document and the digital document, which is not the case in our invention, wherein the only binding element between the tangible document and the web page is the URL string, and no coordinate isomorphism exists. Thus, our invention is far more useful and generic, because linked web pages need not know anything about the coordinates or the URL location on the surface. This is not the case with the *Dymetman* invention.

CONCLUSION

It is earnestly requested that the application be reconsidered, and that the four independent claims (which are similar to each other) be allowed, as well as the claims depending therefrom. Applicant respectfully requests that the Examiner please contact Applicant's attorney by telephone, if doing so might facilitate or expedite examination of the present application. It is submitted that early passage of the present claims to issuance would be appropriate according to the relevant statutes and regulations, in view of the novel and useful invention claimed by the present application.

Respectfully submitted,



Andrew T. Hyman
Attorney for the Applicant
Registration No. 45,858

October 27, 2005
ATH/mbh
WARE, FRESSOLA, VAN DER SLUYS
& ADOLPHSON LLP
755 Main Street, PO Box 224
Monroe CT 06468
(203) 261-1234